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EXAMINER	
VOGEL, NANCY TREPTOW	

ART UNIT	PAPER NUMBER
1636	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/527,559	EBRIGHT, RICHARD H.	
	Examiner	Art Unit	
	NANCY VOGEL	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-6 and 9-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-6, 9-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1, 4-6, 9-13 are pending in the case.

Any rejection of record in the previous action not addressed in this office action is withdrawn. There are no new grounds of rejection that were not necessitated by applicants' amendment and therefore, this action is final.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 6, 10, are rejected under 35 U.S.C. 102(b) as being anticipated by Sonenshein et al. (J. Bacteriol., Vol. 132, No. 1, 73-79, 1977).

Sonenshein et al. disclose a method of identifying an agent that binds to a bacterial RNAP homologous RNA exit channel amino-acid sequence in an B. subtilis bacterial RNAP, comprising the steps of preparing a reaction solution including the agent (lipiarmycin) to be tested and a bacterial RNAP that contains a bacterial RNAP homologous RNA-exit-channel amino-acid sequence, and detecting the presence of binding of the agent to the homologous bacterial RNAP RNA-exit-channel amino acid-sequence (see Fig. 2, Fig. 4). The detection of inhibition of RNA polymerase function constitutes a method of detecting the binding the agent to the RNAP. The reference

also teaches a further step of detecting the presence and concentration dependence of binding of the agent to a second bacterial RNAP that contains a derivative of a bacterial RNAP homologous RNA-exit-channel amino acid sequence having at least one substitution, insertion or deletion (see Fig. 4).

Applicant's arguments filed 1/6/11 have been considered but have not been found convincing. Applicants have argued that the Shorenstein provides no mention of the target sequence of claim 1, which is the homologous bacterial RNAP RNA-exit-channel amino acid sequence, and provides not information that connects, or could be used to connect, the compound studied in the reference, lipiarmycin, to the target sequence of the method of claim 1. Applicants argue that the examiner's assertion that the homologous bacterial RNAP RNA-exit channel amino acid sequence of claim 1 is found in the Sonenschein et al. reference is based on Examiner's knowledge. However, this information is based on the disclosure of the instant application, which discloses that the cite recited in the claims, i.e. the "homologous bacterial RNAP RNA-exit-channel amino acid sequence" is inherently present in the bacterial RNA polymerase (page 4). The application further discloses that lipiarmycin acts by binding to this cite (page 5, 48). Therefore, when Sonenschein discloses a method in which the agent which is lipiarmycin is added to a bacterial RNAP, and the presence of binding of this agent to the RNAP is tested, the method of the instant application is being carried out, and therefore the claims are anticipated by the reference. The reference need not disclose the amino acids involved in the binding, or name this cite, in order to anticipate the claims. Therefore the rejection is maintained.

Claims 1, 4, are rejected under 35 U.S.C. 102(b) as being anticipated by Sergio et al. (J. Antibiotic., Vol. 28, No. 7, 543-549, 1975)

Sergio et al. disclose a method of identifying an agent that binds to a bacterial RNAP homologous RNA exit channel amino-acid sequence in an E. coli bacterial RNAP, comprising the steps of preparing a reaction solution including the agent (lipiarmycin) to be tested and a bacterial RNAP that contains a bacterial RNAP homologous RNA-exit-channel amino-acid sequence, and detecting the presence of binding of the agent to the homologous bacterial RNAP RNA-exit-channel amino acid-sequence (see Fig. 6). The detection of inhibition of RNA polymerase function constitutes a method of detecting the binding the agent to the RNAP.

Applicant's arguments filed 1/6/11 have been considered but have not been found convincing. Applicants have argued that the Sergio provides no mention of the target sequence of claim 1, which is the homologous bacterial RNAP RNA-exit-channel amino acid sequence, and provides not information that connects, or could be used to connect, the compound studied in the reference, lipiarmycin, to the target sequence of the method of claim 1. Applicants argue that the examiner's assertion that the homologous bacterial RNAP RNA-exit channel amino acid sequence of claim 1 is found in the Sergio et al. reference is based on Examiner's knowledge. However, this information is based on the disclosure of the instant application, which discloses that the cite recited in the claims, i.e. the "homologous bacterial RNAP RNA-exit-channel amino acid sequence" is inherently present in the bacterial RNA polymerase (page 4). The application further discloses that lipiarmycin acts by binding to this cite (page 5, 48).

Therefore, when Sergio et al. discloses a method in which the agent which is lipiarmycin is added to a bacterial RNAP, and the presence of binding of this agent to the RNAP is tested, the method of the instant application is being carried out, and therefore the claims are anticipated by the reference. The reference need not disclose the amino acids involved in the binding, or name this cite, in order to anticipate the claims. Therefore the rejection is maintained.

Claims 1, 4, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Talpaert et al. (Bioch. Biophy. Res. Comm, 63(1):328-334).

Talpaert et al. disclose a method of identifying an agent that binds to a bacterial RNAP homologous RNA exit channel amino-acid sequence in an E. coli bacterial RNAP, comprising the steps of preparing a reaction solution including the agent (lipiarmycin) to be tested and a bacterial RNAP that contains a bacterial RNAP homologous RNA-exit-channel amino-acid sequence, and detecting the presence of binding of the agent to the homologous bacterial RNAP RNA-exit-channel amino acid-sequence (see Fig. 2, 3). The detection of inhibition of RNA polymerase function constitutes a method of detecting the binding the agent to the RNAP. The reference further discloses comparison of at least one of the presence extent, concentration-dependence or kinetics of binding of the agent to bacterial RNAP, and at least one of the presence extent, concentration-dependence, or kinetics of binding of the agent to a eukaryotic RNAP (Fig. 1).

Applicant's arguments filed 1/6/11 have been considered but have not been found convincing. Applicants have argued that the Talpaert et al. provides no mention of the target sequence of claim 1, which is the homologous bacterial RNAP RNA-exit-channel amino acid sequence, and provides not information that connects, or could be used to connect, the compound studied in the reference, lipiarmycin, to the target sequence of the method of claim 1. Applicants argue that the examiner's assertion that the homologous bacterial RNAP RNA-exit channel amino acid sequence of claim 1 is found in the Talpaert et al. reference is based on Examiner's knowledge. However, this information is based on the disclosure of the instant application, which discloses that the cite recited in the claims, i.e. the "homologous bacterial RNAP RNA-exit-channel amino acid sequence" is inherently present in the bacterial RNA polymerase (page 4). The application further discloses that lipiarmycin acts by binding to this cite (page 5, 48). Therefore, when Talpaert et al. discloses a method in which the agent which is lipiarmycin is added to a bacterial RNAP, and the presence of binding of this agent to the RNAP is tested, the method of the instant application is being carried out, and therefore the claims are anticipated by the reference. The reference need not disclose the amino acids involved in the binding, or name this cite, in order to anticipate the claims. Therefore the rejection is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 12, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Talpaert et al. (cited above) in view of Young et al. (US Patent 5,919,666).

Talpaert et al. disclose a method of identifying an agent that binds to a bacterial RNAP homologous RNA exit channel amino-acid sequence in an E. coli bacterial RNAP, comprising the steps of preparing a reaction solution including the agent (lipiarmycin) to be tested and a bacterial RNAP that contains a bacterial RNAP homologous RNA-exit-channel amino-acid sequence, and detecting the presence of binding of the agent to the homologous bacterial RNAP RNA-exit-channel amino acid-sequence (see Fig. 2, 3). The detection of inhibition of RNA polymerase function constitutes a method of detecting the binding the agent to the RNAP. The reference further discloses comparison of at least one of the presence extent, concentration-dependence or kinetics of binding of the agent to bacterial RNAP, and at least one of the presence, extent, concentration-dependence, or kinetics of binding of the agent to a eukaryotic RNAP (Fig. 1). The difference between the reference and the instant claims is that human RNAP or RNAPII is used as the eukaryotic RNAP for comparison. However, human RNAP and human RNAPII are known as disclosed in Young et al. (US Patent 5,919,666) (see col. 20-22, claims of Young et al.). As acknowledged in the

reference and the instant specification, purified human RNA polymerase II was known in the art. It would have been obvious to have utilized any mammalian RNA polymerase, including human RNA polymerase II, in the method of Talpaert et al., since the importance of human RNA polymerase II in transcription in human cells was recognized in the art, as well as the importance of elucidation of antibiotic effects on human systems, such as transcription by RNA polymerase. One would have been motivated to use human RNA polymerase by the desire to identify the effect of any particular antibiotic on the human system of transcription, especially since antibiotics that affect human systems in the same way as bacterial systems, would not be acceptable for human treatment. Based upon the teachings of the cited references, the high skill of one of ordinary skill in the art, and absent evidence to the contrary, there would have been a reasonable expectation of success to result in the claimed invention.

Applicant's arguments filed 1/6/11 have been considered but have not been found convincing. Applicants have argued that the Talpaert et al. provides no mention of the target sequence which is the homologous bacterial RNAP RNA-exit-channel amino acid sequence, and provides no information that connects, or could be used to connect, the compound studied in the reference, lipiarmycin, to the target sequence of the method. Applicants argue that the examiner's assertion that the homologous bacterial RNAP RNA-exit channel amino acid sequence of claim 1 is found in the Talpaert et al. reference is based on Examiner's knowledge. However, this information is based on the disclosure of the instant application, which discloses that the cite recited in the claims, i.e. the "homologous bacterial RNAP RNA-exit-channel amino acid

sequence" is inherently present in the bacterial RNA polymerase (page 4). The application further discloses that lipiarmycin acts by binding to this cite (page 5, 48). Therefore, when Talpaert discloses a method in which the agent which is lipiarmycin is added to a bacterial RNAP, and the presence of binding of this agent to the RNAP is tested, the method of the instant application is being carried out, and therefore the claims are anticipated by the reference. The reference need not disclose the amino acids involved in the binding, or name this cite, in order to anticipate the claims. Therefore the rejection is maintained.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sonenshein et al. (cited above) in view of Talpaert et al. or Sergio et al. (cited above).

Sonenshein et al. disclose a method of identifying an agent that binds to a bacterial RNAP homologous RNA exit channel amino-acid sequence in an B. subtilis bacterial RNAP, comprising the steps of preparing a reaction solution including the agent (lipiarmycin) to be tested and a bacterial RNAP that contains a bacterial RNAP homologous RNA-exit-channel amino-acid sequence, and detecting the presence of binding of the agent to the homologous bacterial RNAP RNA-exit-channel amino acid-sequence (see Fig. 2, Fig. 4). The detection of inhibition of RNA polymerase function constitutes a method of detecting the binding the agent to the RNAP. The reference also teaches a further step of detecting the presence and concentration dependence of binding of the agent to a second bacterial RNAP that contains a derivative of a bacterial

RNAP homologous RNA-exit-channel amino acid sequence having at least one substitution, insertion or deletion (see Fig. 4).

The difference between the reference and the instant claim is that E. coli, rather than B. subtilis, derivatives having at least one substitution, insertion or deletion in the RNAP homologous RNA-exit-channel amino acid sequence is used in the further method. However, Talpaert et al. and Sergio et al. each disclose methods of identifying an agent that binds to RNAP homologous RNA exit channel amino acid sequence in E. coli RNAP. It would have been obvious to have used E. coli RNAP in the method of Sonenshein et al., since E. coli RNAP is known to have homology to B. subtilis RNAP, and since mutants of each in the RNAP homologous RNA-exit-channel amino acid sequence would be expected to behave similarly. One would have been motivated to do so by the interest in the identification of agents and their mode of action useful against E. coli, especially since it is a known pathogen. Based upon the teachings of the cited references, the high skill of one of ordinary skill in the art, and absent evidence to the contrary, there would have been a reasonable expectation of success to result in the claimed invention.

Applicant's arguments filed 1/6/11 have been considered but have not been found convincing. Applicants have argued that the Sonenschien provides no mention of the target sequence which is the homologous bacterial RNAP RNA-exit-channel amino acid sequence, and provides not information that connects, or could be used to connect, the compound studied in the reference, lipiarmycin, to the target sequence of the method of the claims. Applicants argue that the examiner's assertion that the

homologous bacterial RNAP RNA-exit channel amino acid sequence of the clams is found in the Sonenschein et al. reference is based on Examiner's knowledge. However, this information is based on the disclosure of the instant application, which discloses that the cite recited in the claims, i.e. the "homologous bacterial RNAP RNA-exit-channel amino acid sequence" is inherently present in the bacterial RNA polymerase (page 4). The application further discloses that lipiarmycin acts by binding to this cite (page 5, 48). Therefore, when Sonenschein discloses a method in which the agent which is lipiarmycin is added to a bacterial RNAP, and the presence of binding of this agent to the RNAP is tested, the method of the instant application is being carried out, and therefore the claims are anticipated by the reference. The reference need not disclose the amino acids involved in the binding, or name this cite, in order to anticipate the claims. Therefore the rejection is maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NANCY VOGEL whose telephone number is (571)272-0780. The examiner can normally be reached on 7:00 - 3:30, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arden Marschel can be reached on (571) 272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NANCY VOGEL/
Primary Examiner, Art Unit 1636

NV
3/18/11